it. However, if too thin, the effect of the subbing film as a seed layer will be attenuated. Therefore, it is also desirable that the fcc metal layer moiety is not too thin. Concretely, it is desirable that the subbing seed layer exclusive of the subbing buffer layer of Ta or the like has a thickness of from 2 to 5 nanometers or so. However, when an additive element capable of increasing resistance is added to the subbing seed layer to reduce the shunt current, the thickness of the subbing seed layer may be larger than 5 nanometers.

In place of the fcc metal laminate films capable of forming alloys such as those mentioned above, further employable herein are alloys of the fcc-forming combinations additionally containing any additive elements. Still other examples also employable herein are fcc alloys containing Ni but not Cu, such as PtNi alloys (of which the Pt content is preferably larger than 26 at.% for Pt-rich alloys), RhNi alloys, PdNi alloys (as being magnetic in almost all compositions, adding a third element to these is preferred), IrNi alloys (of which the Ir content is preferably larger than 12 at.% for Ir-rich alloys), etc. Also for those alloys, the buffer metal may be any of Ti, W, Zr, Mo, Hf or alloys comprising them, in place of Ta. Like the laminate films mentioned above, it is also desirable that those fcc alloy films have a thickness of from 2 to 5 nanometers. If their resistance is increased by

some additive elements added thereto, their thickness may be larger than 5 nanometers.

Specific examples of the constitution discussed herein are;

5 nanometer Ta/1 nm Pt/1 nm Cu/2 to 8 nm CoFe/3 nm Cu/2.5 nm CoFe/7 nm IrMn/5 nanometer Ta,

5 nanometer Ta/2 nm PtCu/2 to 8 nm CoFe/3 nm Cu/2.5 nm CoFe/7 nm IrMn/5 nanometer Ta,

5 nanometer Ta/1 nm Au/1 nm Cu/7 nm IrMn/3 nm CoFe/1 nm Ru/3 nm CoFe/3 nm Cu/1 nm CoFe/5 nm NiFe/5 nanometer Ta,

5 nanometer Ta/1 nm Au/1 nm Cu/7 nm IrMn/2.5 nm CoFe/3 nm Cu/1 nm CoFe/5 nm NiFe/5 nanometer Ta,

5 nanometer Ta/1 nm Au/1 nm Cu/7 nm IrMn/3 nm CoFe/1 nm Ru/3 nm CoFe/3 nm Cu/4 nm CoFe/5 nanometer Ta,

5 nanometer Ta/1 nm Au/1 nm Cu/7 nm IrMn/3 nm CoFe/1 nm Ru/3 nm CoFe/3 nm Cu/4 nm CoFe/3 nm Cu/3 nm CoFe/1 nm Ru/3 nm CoFe/7 nm IrMn/5 nanometer Ta,

5 nanometer Ta/2 nm Cu/7 nm IrMn/3 nm CoFe/1 nm Ru/3 nm CoFe/3 nm Cu/4 nm CoFe/3 nm Cu/3 nm CoFe/1 nm Ru/3 nm CoFe/7 nm IrMn/5 nanometer Ta, etc.

Example g:

The MR-improving layer mentioned hereinabove is applicable even to artificial lattice sensors such as that in Fig. 49. In the illustrated case, the number of the magnetic layers 71 of, for example, Co-containing films or Ni-containing

films as combined with the nonmagnetic layers 72 is larger than the number of the layers constituting the spin valve film. In the case, the MR-improving layers 73 are disposed each adjacent to any of the uppermost magnetic layer and the lowermost magnetic layer. For the materials constituting the layers, the same as in Example a shall apply to this case.

The first to seventh embodiments of the invention are described in detail hereinabove with reference to the Examples, which, however, are not intended to restrict the scope of the invention.

For example, Fig. 50 to Fig. 52 are conceptual views showing still other modifications of the invention.

Specifically, Fig. 50 shows the cross section of a spin valve device part as seen from its ABS (air baring surface). Fig. 51 is a perspective view of a spin valve device with its gap film and shield film being removed.

On an AlTiC substrate 10, formed are a lower shield 11 and a lower gap film 12. In this, the lower shield 11 may be of NiFe, a Co-based amorphous magnetic alloy, an FeAlSi alloy or the like, and its thickness may fall between 0.5 and 3 μm. For NiFe and FeAlSi alloys, it is desirable that the surface of the lower shield 11 is polished so that its roughness height could be smaller than the thickness of the antiferromagnetically coupling interlayer of the Synthetic pinned magnetic layer. The lower gap film 12 may be of alumina,